

**WHAT IS CLAIMED IS:**

1                   1.       A method for fabricating a sensor on a substrate having a pair of  
2       electrodes, said method comprising:  
3                   depositing a first layer of conducting material onto said substrate having a  
4       pair of electrodes; and  
5                   depositing a second layer of polymer film onto said first layer of  
6       conducting material thereby fabricating said sensor.

1                   2.       The method according to claim 1, wherein said conducting material  
2       comprises carbon black.

1                   3.       The method according to claim 1, wherein said deposition of said  
2       conducting material is by aerosol spraying.

1                   4.       The method according to claim 2, further comprising drying said  
2       carbon black before deposition of said second layer.

1                   5.       The method according to claim 2, wherein said carbon black layer  
2       has a thickness between about 0.01 micron to about 10 microns.

1                   6.       The method according to claim 5, wherein said carbon black layer  
2       has a thickness between about 0.1 micron to about 1 micron.

1                   7.       The method according to claim 1, further comprising depositing  
2       said first layer of conducting material through a mask.

1                   8.       The method according to claim 7, wherein said mask comprises a  
2       plurality of apertures.

1                   9.       The method according to claim 1, wherein said deposition of said  
2       first layer of conducting material comprises robotic amateur.

1                   10.      The method according to claim 1, wherein said deposition of said  
2       second layer of said polymer film comprises robotic amateur.

1                   11.      The method according to claim 1, further comprising depositing  
2       said second layer of polymer film through a mask.

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1                   12.    The method according to claim 11, wherein said mask comprises a  
2 plurality of apertures.

1                   13.    The method according to claim 1, further comprising processing  
2 said second layer of polymer film after depositing upon said first layer of conducting  
3 material.

1                   14.    The method according to claim 13, wherein said processing is a  
2 member selected from the group consisting of vacuum processing, photo-active  
3 polymerization and cross-linking.

1                   15.    The method according to claim 1, wherein said sensor is an array  
2 of sensors having a first sensor and a second sensor.

1                   16.    The method according to claim 15, wherein said first sensor is  
2 compositionally different than said second sensor.

1                   17.    The method according to claim 15, wherein said first sensor has a  
2 different polymer film layer than said second sensor.

1                   18.    The method according to claim 1, wherein said substrate comprises  
2 a dielectric material.

1                   19.    The method according to claim 1, wherein said substrate further  
2 comprises a member selected from the group consisting of a heater, a thermistor and a  
3 combination thereof.

1                   20.    The method according to claim 1, wherein said substrate further  
2 comprises a member selected from the group consisting of a temperature probe, humidity  
3 probe and a combination thereof.

1                   21.    A method for fabricating a sensor on a substrate having a pair of  
2 electrodes, said method comprising:  
3                   depositing a first layer of conducting material onto said substrate having a  
4 pair of electrodes to form a substrate having a conducting material disposed thereon;  
5                   processing said substrate having a conducting material disposed thereon to  
6 remove any solvent;

7 depositing a second layer of polymer film onto said first layer of  
8 conducting material to form a fabricated sensor; and  
9 processing said fabricated sensor to cure said second layer of polymer  
10 film.

1 22. The method according to claim 21, wherein said sensor is an array  
2 of sensors.

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